

Notice No.2

Rules and Regulations for the Classification of Inland Waterways Ships July 2018

The status of this Rule set is amended as shown and is now to be read in conjunction with this and prior Notices.

Any corrigenda included in the Notice are effective immediately.

Please note that corrigenda amends to paragraphs, Tables and Figures are not shown in their entirety.

Issue date: June 2019

Amendments to	Effective date	IACS/IMO implementation (if applicable)
Part 1, Chapter 2, Sections 2, 3, 4 & 5	1 July 2019	N/A
Part 1, Chapter 3, Sections 1 – 11, 13 – 16	1 July 2019	N/A

Part 1, Chapter 2

Classification Regulations

■ Section 2

Character of classification and class notations

2.1 Definitions

2.1.9 **Ice notation (ICE)**. A notation indicating that the ship has been designed, modified or arranged to navigate in ice. **ICE**.

2.3 Class notations (hull)

2.3.1 When considered necessary by the Classification Committee, or when requested by an Owner and agreed by the Classification Committee, a class notation will be appended to the character of classification assigned to the ship. This class notation will consist of one of, or a combination of: a type notation, a cargo notation, a loading sequence notation, a loading notation, an 'ICE' ice notation and zone notation, e.g. **A1 I.W.W., L.S. 'O', ICE, Zone 2 Zone 2**.

(Part only shown)

2.3.3 Service extension notations (service in areas which are not considered as Inland Waterways) may be assigned where, under specified conditions, the ship operates on an agreed route or in an agreed operating area. These conditions are such that the structural and system requirements specified in these Rules are sufficient.

These conditions are to be included in the class notation (e.g. geographical limits, maximum permissible distance out to sea, ~~windforce~~ ~~wind force~~, sea condition), as appropriate).

2.4 Class notations (machinery)

(Part only shown)

2.4.1 The following class notations may be assigned as considered appropriate by the Classification Committee.

[]LMC = This notation will be assigned when the propelling arrangements, steering systems, pressure vessels and the electrical equipment for essential systems have been constructed, installed and tested under LR's Special Survey and are in accordance with LR's Rules and Regulations. Other items of machinery for propulsion and electrical power generation including propulsion gearing arrangements and other auxiliary machinery for essential services that are in compliance with LR Rules and supplied with the manufacturer's certificate will be acceptable under this notation. The system arrangements of propelling and essential auxiliary machinery are required to be appraised by LR, and found to be acceptable to LR. See **Section Pt 1, Ch 2, 2.6 Application notes 2.6.2**.

MCH = This notation will be assigned when the propelling and essential auxiliary machinery has been installed and tested under LR's survey requirements and found to be acceptable to LR. Items of machinery and equipment for propelling and auxiliary machinery for essential services supplied with the manufacturer's certificate will be acceptable under this class notation. The system arrangements of propelling and essential auxiliary machinery are required to be appraised by LR, and found to be acceptable to LR. See **Section Pt 1, Ch 2, 2.6 Application notes 2.6.3**.

2.4.2 Machinery class notations will not be assigned to ships, the hulls of which ships of which the hulls are not classed or intended to be classed with LR.

2.5 Class notations (Environmental Protection)

2.5.1 The following class notations are associated with the design and operation of a ship and may be assigned as considered appropriate by the Classification Committee, on application from the Owners:

ABN() This notation will be assigned where a vessel has had its airborne noise measured and certified in accordance with LR's *ShipRight Additional Design and Construction Procedure for the determination of airborne noise emissions from marine vessels*, and the sound power and sound pressure are found to be less than the assessment criterial limits it contains. The parentheses are to contain the characters associated with the most stringent assessment criteria limits that the airborne noise of the vessel satisfies.

Existing sub-Sections 2.5 to 2.6 have been renumbered as 2.6 to 2.7.

■ **Section 3** **Surveys – General**

3.2 New construction surveys

3.2.1 When it is intended to build a ship for classification with LR, constructional plans and all necessary particulars relevant to the hull, equipment and machinery as detailed in the Rules, are to be submitted for the approval before the work is commenced. Any subsequent modifications or additions to the scantlings, arrangements or equipment shown on the approved plans are also to be submitted for approval.

3.2.8 The date of completion of the Special Survey during construction of ships built under LR's ~~inspection survey~~ will normally be taken as the date of build to be entered in the ~~LR Publication Record~~ Ship Records. If the period between launching and commissioning is, for any reason, unduly prolonged, the dates of launching and completion or commissioning may be separately indicated in the ~~LR Publications~~ Ship Records.

3.4 Repairs and alterations

3.4.1 All repairs to hull, equipment and machinery which may be required in order that a ship may retain her class, see ~~Section Pt 1, Ch 2, 1.1 General 1.1.5 above~~, are to be carried out to the satisfaction of the Surveyors. When repairs are effected at a port, terminal or location where the services of a Surveyor to LR are not available, the repairs are to be surveyed by one of the Surveyors at the earliest opportunity thereafter.

3.4.3 When, at any survey, it is found that any damage, defect or breakdown (see ~~Section Pt 1, Ch 2, 1.1 General 1.1.5~~) is of a nature that does not require immediate permanent repair, but is sufficiently serious to require rectification by a prescribed date in order to maintain class, a suitable condition of class is to be imposed by the Surveyors and recommended to the Classification Committee for consideration.

3.5 Existing ships – Periodical Surveys

3.5.3 All classed ships, other than as mentioned in ~~Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.1 and Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.2~~, are to be subjected to Intermediate Surveys. These surveys become due 30 months after the date of build or of the previous Special Survey and are to be completed within 6 months before and after the Intermediate Survey due date. The date of the last ~~Annual~~ Intermediate Survey will be recorded on the ~~LR~~ Class Direct website.

3.5.4 All classed ships are to be subjected to Special Surveys. These surveys become due at five-yearly intervals, the first one five years from the date of build or date of Special Survey for classification, and thereafter five years from the date of the previous Special Survey. The date of the last ~~Annual~~ Special Survey will be recorded on the ~~LR~~ Class Direct website.

3.5.7 For ships mentioned in ~~Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.1~~, the ship is to be dry-docked or placed on a slipway, between the second and third year after the date of build or the last Special Survey, for examination in accordance with ~~Pt 1, Ch 3, 3.2 Examination and testing 3.2.3~~ to be carried out concurrently with the periodical load line inspection, where practicable.

~~3.5.7 3.5.8~~ The Owners should also notify LR whenever a ship can be examined in dry dock or on a slipway on account of damage or defects ~~sustained between Periodical Surveys~~.

~~3.5.8 3.5.9~~ When it is inconvenient for an Owner to fulfil all the requirements of a Special Survey at its due date, the Committee will be prepared to consider its extension, either wholly or in part, provided that LR's Surveyors are afforded an opportunity, ~~about~~ prior to the due date, of assessing the general condition of the hull. For this purpose, the Classification Committee will normally call for a General Examination of the ship of sufficient extent and which may include dry-docking (depending on age and records of the ship) to be assured that its condition is satisfactory for the period of grace desired, which is not to exceed 12 months from the due date. Attention is drawn to relevant regulations of the National Authorities of the country where the ship is registered. On completion of the ~~Hull~~ Special Survey, the assigned date will be the last date the ~~ship vessel~~ was under survey. The date assigned is not to exceed six years from the previous due date.

Existing paragraphs 3.5.9 to 3.5.11 have been renumbered 3.5.10 to 3.5.12.

~~3.5.12 3.5.13~~ Boiler Surveys, ~~examination of steam pipes and Screwshaft Surveys~~ are to be carried out as stated in ~~Pt 1, Ch 3, 13~~ ~~Boilers~~. The date of the last ~~Annual~~ Boiler Survey will be recorded on the ~~LR~~ Class Direct website.

3.5.14 Steam pipes Surveys are to be carried out as stated in ~~Pt 1, Ch 3, 14~~ ~~Steam pipes~~. The date of the last Steam pipes Survey will be recorded on the ~~LR~~ Class Direct website.

3.5.15 Screwshaft Surveys are to be carried out as stated in ~~Pt 1, Ch 3, 15~~ ~~Screwshafts, tube shafts and propellers~~. The date(s) of the last Screwshaft Survey(s) will be recorded on the ~~LR~~ Class Direct website.

Existing paragraph 3.5.13 has been renumbered 3.5.16.

3.5.14 3.5.17 When it is inconvenient for an Owner to fulfil all the requirements of a Complete Machinery Survey at its due date, the Committee will be prepared to consider an extension, either wholly or in part, provided that LR's Surveyors are afforded an opportunity, about the due date, of assessing the general condition of the machinery. For this purpose, the Classification Committee will normally call for a General Examination to be made, of sufficient extent to assure them that the condition of the machinery is satisfactory for the period of grace desired, which is not to exceed 12 months from the due date. Attention is drawn to relevant Regulations of the National Authorities of the country where the ship is registered. On completion of the Machinery Survey, the assigned date will be the last date the ship vessel was under survey. The date assigned is not to exceed six years from the previous due date.

3.5.15 3.5.18 Where the ship is fitted with a-classed dynamic positioning equipment, the system is to be examined at each Intermediate Survey and at the due time of the ~~Special Survey~~ Complete Survey of machinery in accordance with the requirements of *Pt 1, Ch 3, 10.2 Intermediate Surveys 10.2.4 (Intermediate)* and *Pt 1, Ch 3, 10.3 Complete Survey of machinery 10.3.13 (Special Survey)*.

Existing paragraph 3.5.16 has been renumbered 3.5.19.

3.6 Certificates

3.6.1 When the required reports, on completion of the Special Survey of new or existing ships which have been submitted for classification, have been received from the Surveyors and classification has been agreed by the Classification Executive, a Certificate of Classification may be issued by an authorised Surveyor. After approval by the Classification Committee, a certificate of First Entry of Classification, signed by LR's Chairman or the Chairman of the Classification Committee, will be issued to the contracting Builders or Owners.

3.6.2 A certificate of class ~~Certificate of Class~~ valid for five years subject to Annual and/or Intermediate Surveys will also be issued to the Owners.

3.7 Notice of surveys

3.7.2 LR will make available to an Owner timely notice about forthcoming surveys by means of a *Quarterly Listing of Surveys, Conditions of Class and Memoranda*. This can be requested from the LR Class Direct website. The omission of such notice, however, does not absolve the Owner from his responsibility to comply with LR's survey requirements for maintenance of class, all of which are available to Owners on the LR Class Direct website.

3.8 Withdrawal/Suspension of class

3.8.3 Class will be automatically suspended and the Certificate of Class will become invalid if the Annual or Intermediate Survey has not been completed within the prescribed range ~~or the due date of dates~~ for the survey.

3.8.4 Class will be automatically suspended from the expiry date of the Certificate of Class in the event that the Special Survey has not been completed by the due date and an extension has not been agreed (see *Section-Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.8*), or is not under attendance by the Surveyors with a view to completion prior to resuming trading.

3.8.5 When, in accordance with *Section-Pt 1, Ch 2, 3.4 Repairs and alterations 3.4.3* of the Regulations, a condition of class is imposed, this will be assigned a due date for completion and the ship's class will be subject to a suspension procedure if the condition of class is not dealt with, or postponed by agreement, by the due date.

3.8.6 When it is found, from the reported condition of the hull or equipment or machinery of a ship, that an Owner has failed to comply with *Sections-Pt 1, Ch 2, 1.1 General 1.1.5, Pt 1, Ch 2, 3.4 Repairs and alterations 3.4.1* or *Pt 1, Ch 2, 3.4 Repairs and alterations 3.4.5*, the class will be liable to be suspended or withdrawn, at the discretion of the Classification Committee, and a corresponding notation assigned. When it is considered that an Owner's failure to comply with these requirements is sufficiently serious, the suspension or withdrawal of class may be extended to include other ships controlled by the same Owner, at the discretion of the Classification Committee.

3.8.10 For reclassification and reinstatement of class, see *Section-Pt 1, Ch 2, 3.3 Existing ships 3.3.2*.

3.11 Ownership details

3.11.1 It is the responsibility of the Owner to inform a member of the LR Group in writing of any change to its contact details and in the event of a ship sale to supply details of the new Owners. If the new Owner of a ship cannot be properly identified and the contact details established then the class of that ship will be specially considered by the Classification Committee. It is the responsibility of the new Owner to inform a member of the LR Group in writing of their contact details and that they are now responsible for the ship; if they fail to do so then the class of that ship will be specially considered by the Classification Committee. The Owner will ensure a member of the LR Group - Marine and Offshore division is promptly informed in writing of any change to their contact details and, in

the event of a vessel/asset transfer or sale, is to supply details of the new Owner in writing. The new Owner is to promptly inform a member of the LR Group - Marine and Offshore division in writing of their contact details. If the new Owner fails to do so and if LR cannot verify the ownership record, then the class of that vessel/asset will be specially considered by the Classification Committee.

■ **Section 4** **Type Approval/Type Testing/ Quality Control System**

4.1 LR Type Approval – Marine application

4.1.3 The selective testing required by ~~Pt 1, Ch 2, 4.1 LR Type Approval – Marine application~~ 4.1.2 is to include environmental testing applicable to the product's installation on board a ~~ship~~ vessel classed or intended to be classed with LR.

■ **Section 5** **Classification of machinery with [⊗]LMC or MCH notation**

5.1 General

5.1.1 After delivery of machinery and equipment with the manufacturer's certificate to the shipyard, ~~the Survey at the Shipyard and Periodical Surveys are to be in accordance with the requirements for ships built or accepted into class with the~~ **⊗ LMC** notation.

5.2 Appraisal and records

5.2.1 To facilitate survey and compilation of classification records, the same plans and information required for a ship being accepted into class with the **⊗ LMC** notation are to be submitted for the alternative notations **[⊗]LMC** or **MCH**, for appraisal and information. Plans are not required where machinery and equipment has previously been type approved; in these cases it is only necessary to submit details of the machinery and equipment together with details of the previous type approval.

5.3 Survey and inspection

5.3.2 The installation and testing of machinery and equipment at the build yard which has been supplied with a manufacturer's certificate is to be in accordance with the requirements applicable to a ship having **{⊗}LMC** notation.

Part 1, Chapter 3

Periodical Survey Regulations

■ Section 1

General

1.1 Frequency of surveys

1.1.1 The requirements of this Chapter are applicable to the Periodical Surveys set out in Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys. The periods intervals between such surveys are as follows:

- (a) Annual Surveys at yearly intervals, as required by Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.1 or Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.2.
- (b) Intermediate Surveys at intervals of 30 months, see Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.3.
- (c) Special Surveys at five-yearly intervals, see Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.4 and Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.8.
- (d) Complete Surveys of machinery at five-yearly intervals, see Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.10 3.5.11 and Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.14 3.5.15.
- (e) Consideration will be given to alternative periods between surveys where these are specified by local Administration or Authority Regulations for inland waterways vessels that trade solely within their jurisdictions.

1.1.2 For the frequency of surveys of boilers, steam pipes, screwshafts, tube shafts, propellers and inert gas systems, see Pt 1, Ch 3, 13 Boilers.

1.1.3 For the frequency of surveys of steam pipes, see Pt 1, Ch 3, 14 Steam pipes.

1.1.4 For the frequency of surveys of screwshafts, tube shafts and propellers, see Pt 1, Ch 3, 15 Screwshafts, tube shafts and propellers.

1.1.5 For the frequency of surveys of inert gas systems, see Pt 1, Ch 3, 16 Inert gas systems.

Existing paragraph 1.1.3 has been renumbered 1.1.6.

1.4 Definitions

1.4.2 A **Bulk Carrier** is a self-propelled ship or a non-propelled ship (barge) intended for the carriage of dry bulk heavy cargoes. See Pt 4, Ch 1 Dry Cargo Ships.

1.4.3 A **Container Ship** is a self-propelled ship or a non-propelled ship (barge) intended for the carriage of containers. See Pt 4, Ch 1 Dry Cargo Ships.

1.4.4 A **Chemical Tanker** is a self-propelled ship or a non-propelled ship (barge) constructed generally with integral tanks and being double hull construction, used primarily for the carriage of chemicals in bulk in bulk of chemicals. See Pt 4, Ch 4 General Requirements For Tankers Carrying Dangerous Liquids in Bulk and Pt 4, Ch 6 Tankers of Types C and N.

1.4.5 A **Gas Tanker** is a cargo ship designed, constructed and used for the carriage in bulk of liquefied gases or other liquid products of a flammable nature. See Pt 4, Ch 4 General Requirements For Tankers Carrying Dangerous Liquids in Bulk and Pt 4, Ch 5 Tankers of Type G.

1.4.9 An **Overall Survey** is a survey intended to report on the overall condition of the hull structure and to determine the extent of additional Close-up Surveys, if required.

1.4.10 A **Close-up Survey** is a survey where the details of structural components are within the close visual inspection range of the Surveyor, i.e. normally within reach of hand.

1.4.11 1.4.10 A **Transverse Section** includes all longitudinal members such as plating, longitudinals and girders at the deck, side, bottom, inner bottom, inner side, hopper side, top wing side and longitudinal bulkhead, where fitted. For transversely framed ships, a transverse section includes adjacent frames and their end connections in way of transverse sections.

1.4.12 **Representative Spaces** are those which are expected to reflect the condition of other spaces of similar type and service and with similar corrosion prevention systems. When selecting representative spaces, account is to be taken of the service and repair history on board and identifiable Critical Structural Areas.

1.4.13 1.4.11 **Critical Structural Suspect Areas** are locations which have been identified from calculations to require monitoring or from the service history of the subject ship or from similar ships or sister ships, if applicable, to be sensitive to cracking, buckling or corrosion which would impair the structural integrity of the ship.

1.4.14 1.4.12 A **Corrosion Prevention System Hard Coating** is one that cures dry and hard, ~~normally considered a full hard protective coating~~. This is usually to be an epoxy coating or equivalent. Other systems (e.g. soft coatings) may be considered acceptable as alternatives provided they are applied and properly maintained in compliance with the manufacturer's specification.

1.4.15 1.4.13 **Coating Condition** is defined as follows:

GOOD	condition with only minor spot rusting affecting not more than 20 per cent of areas under consideration, e.g. on a deck transverse, side transverse, on the total area of platings and stiffeners on the longitudinal structure between these components, etc.
FAIR	condition with local breakdown at edges of stiffeners and weld connections and/or light rusting affecting 20 per cent or more of areas under consideration.
POOR	condition with general breakdown of coating affecting 20 per cent or more of areas under consideration or hard scale affecting 10 per cent or more of area under consideration.

1.4.16 1.4.14 A **Prompt and Thorough Repair** is a permanent repair completed at the time of survey to the satisfaction of the Surveyor, thereby removing the need for the imposition of any associated condition of class.

1.4.17 ~~Special consideration or specially considered (in connection with close-up surveys and thickness measurements) means sufficient close-up inspection and thickness measurements are to be taken to confirm the actual average condition of the structure under the coating.~~

1.4.18 ~~Air pipe heads installed on the exposed decks are those extending above the freeboard deck or superstructure decks.~~

1.4.19 1.4.15 The **Cargo Area or Cargo Length Area** is that part of the ship which contains all cargo holds and adjacent areas including fuel tanks, cofferdams, ballast tanks and void spaces. For oil tankers and chemical tankers, the **Cargo Area Cargo Length Area** is that part of the ship which contains cargo tanks, slop tanks and cargo/ballast pump-rooms, cofferdams, ballast tanks and void spaces adjacent to cargo tanks and also deck areas throughout the entire length and breadth of the part of the ship over the above mentioned spaces.

1.5 Preparation for survey and means of access

1.5.2 In preparation for survey, thickness measurements and to allow for a thorough examination, all spaces are to be cleaned including removal from surfaces of all loose accumulated corrosion scale. Spaces are to be sufficiently clean and free from water, scale, dirt, oil residues, etc. to reveal corrosion, deformation, fractures, damages or other structural deterioration. However, those areas of structure whose renewal has already been decided by the owner need only be cleaned and descaled to the extent necessary to determine the limits of areas to be renewed ~~renewed areas~~.

1.5.5 For surveys, including close-up survey where applicable, in cargo spaces and ballast tanks, one or more of the following means of access is to be provided:

- Permanent staging and passages through structures.
- Temporary staging and passages through structures.
- ~~Lifts and movable platforms.~~ Hydraulic arm vehicles such as conventional cherry pickers, lifts and movable platforms.
- ~~Boats or rafts.~~ provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water.
- Portable ladders may be used, at the discretion of the Surveyor.
- Other equivalent means.

1.5.7 A survey planning meeting is to be held prior to the commencement of the Intermediate Survey and Special Survey.

■ Section 2 Annual Survey – Hull requirements

2.1 Preparation

2.1.1 The ship is to be arranged and prepared for examination as required by *Pt 1, Ch 3, 2.2 Examination and testing for ships which are to be subjected to Annual Surveys as set out in Ch 2,3.5.1 or Pt 1, Ch 3, 2.3 Examination and testing for ships which are subjected to Annual Surveys as set out in Ch 2,3.5.2 where as applicable*.

2.1.2 The ship is to be dry docked or placed on a slipway, between the second and third year after the date of build or the last Special Survey, for examination in accordance with *Pt 1, Ch 3, 3.2 Examination and testing 3.2.3 to be carried out concurrently with the periodical load line inspection, where practicable*.

2.2 Examination and testing for ships which are to be subjected to Annual Surveys as set out in Ch 2,3.5.1

2.2.1 The Surveyor is to be satisfied satisfy himself as to the efficient condition of the following:

- (a) Hatchways on freeboard and superstructure decks, ventilator and air pipe coamings, exposed casings, skylights, deck-houses and companionways, superstructure bulkheads, side scuttles and deadlights, together with all closing appliances.
- (b) Means of ensuring watertightness of steel hatch covers by hose test if deemed necessary.
- (c) Scuppers and sanitary discharges with valves; ~~guard rails and bulwarks; freeing ports, gangways and life-lines.~~
- (d) Guard rails and bulwarks, freeing ports, gangways and life-lines.
- (e) Freeboard marks; ~~Steering arrangements.~~
- (f) Steering arrangements.
- (g) Vent piping, including that of inert gas installations, where applicable, within the cargo tank area, together with associated flame arresters and pressure/vacuum valves, ~~also cargo and bunker deck piping of tankers.~~
- (h) Cargo and bunker deck piping of tankers.

2.2.2 On tankers of Type G, C and N, see Pt 4, Ch 4 General Requirements For Tankers Carrying Dangerous Liquids in Bulk, Pt 4, Ch 5 Tankers of Type G and Pt 4, Ch 6 Tankers of Types C and N, when submitted for the survey required by Pt 1 Ch 3, 2.1 Preparation 2.1.2 by Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.7, pump-rooms and the electrical installation are also to be inspected, including verification of:

- (a) The efficiency of any safe type equipment fitted.
- (b) The insulation resistance.
- (c) Tests are to be carried out to demonstrate the effectiveness of earth bonding straps, where fitted.

Inert gas installations are to be examined in accordance with Pt 1, Ch 3, 16 Inert gas systems.

■ Section 3 Intermediate Survey – Hull requirements

3.2 Examination and testing

3.2.1 The requirements of Pt 1, Ch 3, 2 Annual Survey – Hull requirements and Pt 1, Ch 3, 10 Machinery surveys – General requirements 10.1 are to be complied with so far as applicable.

Existing paragraphs 3.2.1 to 3.2.3 have been renumbered 3.2.2 to 3.2.4.

3.2.4 3.2.5 The Surveyor is to be satisfied satisfy himself as to the efficient condition of the following, where applicable:

- (a) Hatchways with beams and covers, deck houses and companionways together with any closing appliances.
- (b) Scuppers and sanitary discharges so far as practicable; ~~bulwarks and guard rails.~~
- (c) Bulwarks and guard rails.
- (d) Wheelhouse elevation arrangements.

Existing paragraph 3.2.5 has been renumbered 3.2.6.

3.2.6 3.2.7 Where rod and chain steering gear is fitted, attention is to be paid to all parts of rod and chain gears. All pins are to be examined and the chain in the vicinity of the blocks is to be cleaned and examined for wear and tear. Any length of chain so worn that its mean diameter at its most worn part is reduced by 11-12 per cent or more from its Rule diameter, is to be renewed. All replacements of chains are to be subjected, at a recognised Proving Establishment, to the proof tests required for short link cables by Ch 10 Equipment for Mooring and Anchoring of the Rules for the Manufacture, Testing and Certification of Materials, July 2018, incorporating Notice No.1 and the certificates are to be produced. It is recommended that, in addition, a breaking test be applied to these chains.

Existing paragraphs 3.2.7 to 3.2.10 have been renumbered 3.2.8 to 3.2.11.

3.2.11 3.2.12 On tankers of Type G, C and N Closed and N open with flame screens, see Pt 4, Ch 4 General Requirements For Tankers Carrying Dangerous Liquids in Bulk, Pt 4, Ch 5 Tankers of Type G and Pt 4, Ch 6 Tankers of Types C and N, pump-rooms, cargo, bunker and vent piping systems on deck and in pump-rooms, pressure/vacuum valves and flame arresters and the electrical installation are also to be inspected, including verification of:

- (a) The efficiency of any safe type equipment fitted.
- (b) The insulation resistance.
- (c) Tests are to be carried out to demonstrate the effectiveness of earth bonding straps, where fitted.

Inert gas installations are to be examined in accordance with Pt 1, Ch 3, 1 General Pt 1, Ch 3, 16 Inert gas systems.

■ Section 4

Special Survey – Hull requirements

4.2 Examination and testing

4.2.3 The Surveyor may require to gauge, by drilling ultrasonic thickness measurement or other approved means, the thickness of the material in any portion of the structure where signs of wastage are evident or wastage is normally found. Any parts of the structure which are found defective or materially reduced in scantlings are to be made good by materials of approved scantlings and quality. Attention is to be given to the structure in way of discontinuities. Surfaces are to be re-coated as necessary.

4.2.5 Double bottom compartments tanks, peak tanks and all other tanks are to be tested by a head sufficient to give the normal maximum pressure that can be experienced in service. Tanks may be tested afloat provided that their internal examination is also carried out afloat. Tanks forming part of the main structure, except as stated below, are to be cleaned and examined internally, special attention being given to tanks under boiler spaces. Tanks (excluding peak tanks) used exclusively for fuel oil or fresh water in ships less than 15 years old need not be examined internally, provided that, after external examination and testing in accordance with the requirements set out above, the Surveyor finds the condition of these compartments satisfactory.

4.2.6 Spaces which are inaccessible for examination, e.g. low double bottom tanks, boxed in web-frames, spaces under tanks not forming part of the ship's structure, are to be examined externally and gauged as necessary. In case of doubt, openings are to be made in the structure for examination of the interior so that the Surveyor can satisfy himself be satisfied as to the efficient condition of the structure.

4.2.9 The anchors are to be examined. If the chain cables are ranged they are to be examined. Chain cables of ships over 10 years old are to be ranged at each Special Survey. If any length of chain cable is found to be reduced in mean diameter at its most worn part by 12 44 per cent or more from its nominal diameter, it is to be renewed. The windlass is to be examined.

4.3 Thickness measurements

4.3.1 The general minimum requirements for thickness measurements for all ship types are given in *Table 3.4.1 Thickness Measurements - All ship types*. The Surveyor may extend the thickness measurements as deemed necessary.

Table 3.4.1 Thickness Measurements - All ship types

Special Survey I Special Survey I (Ships 5 years old)	Special Survey II Special Survey II (Ships 10 years old)	Special Survey III Special Survey III (Ships 15 years old)	Special Survey IV Special Survey IV (Ships 20 years old and over)
– Critical areas Suspect Areas, as required by the Surveyor, see Note 6	Within the cargo length area or 0,5L amidships: - selected deck plates - one transverse section - selected bottom/inner bottom plates - selected side shell plates - selected hatch covers and coamings, see Note 1 Note 1 – Critical areas , as required by the Surveyor	Within the cargo length area or 0,5L amidships: - each exposed deck plate - two transverse sections - selected tank top plates - each bottom/inner bottom plates - all side shell plates - selected transverse and longitudinal cargo hold bulkheads, see Note 1 Note 1 - all hatch covers and coamings, see Note 1 Note 1 – Critical areas , as required by the Surveyor	Within the cargo length area or 0,5L amidships: - each deck plate - three transverse sections, see Note 3 Note 3 - each bottom/inner bottom/tank top plate - all side shell plates - all transverse and longitudinal cargo hold bulkheads, see Note 1 Note 1 - all hatch covers and coamings, see Note 1 Note 1 – Critical areas , as required by the Surveyor
	Collision bulkhead, forward machinery space bulkhead, aft peak bulkhead, see Notes 1 and 2	Outside the cargo length area: - selected deck plates - selected side shell plates - selected bottom plates - nozzle plating in way of transverse thrust units	Outside the cargo length area: - each deck plate - each side shell plate - each bottom plate - nozzle plating in way of transverse thrust units
(delete)	Collision bulkhead, forward machinery space bulkhead, aft peak bulkhead, see Notes 1 & 2	All transverse and longitudinal bulk heads outside cargo hold area, see Notes 1 & 2	

(delete)	In engine room, see Note 2: - sea chests - sea water crossover manifold - duct keel or pipe tunnel plating and internals		
(delete)	(delete)	Selected internal structure such as ballast tank, floor and longitudinals, transverse frames, web frames, deck beams, girders, etc.	
	In engine room, see Note 2: - sea chests - sea water crossover manifold - duct keel or pipe tunnel plating and internals	Collision bulkhead, forward machinery space bulkhead, aft peak bulkhead, see Notes 1 and 2	All transverse and longitudinal bulk heads outside cargo hold area, see Notes 1 and 2
	Suspect Areas, as required by the Surveyor, see Note 6	In engine room, see Note 2: - sea chests - sea water crossover manifold - duct keel or pipe tunnel plating and internals	In engine room, see Note 2: - sea chests - sea water crossover manifold - duct keel or pipe tunnel plating and internals
		Selected internal structure such as ballast tank, floor and longitudinals, transverse frames, web frames, deck beams, girders, etc.	Selected internal structure such as ballast tank, floor and longitudinals, transverse frames, web frames, deck beams, girders, etc.
		Suspect Areas, as required by the Surveyor, see Note 6	Suspect Areas, as required by the Surveyor, see Note 6

Note 1. Including plates and stiffeners.

Note 2. Measurements may be waived or reduced after satisfactory visual examination, when such bulkheads form the boundaries of dry void spaces or river chests, etc. are found in good condition.

Note 3. The number of transverse sections may be reduced at the Surveyor's discretion for vessels of length under 40 m.

Note 4. In case of original tank coating being in good condition, or tanks are constructed of stainless steel, scope of TM may be reduced at the Surveyor's discretion.

Note 5. In case of detected areas with substantial corrosion, extent of corrosion should be verified by means of 5 point pattern over one (1) square metre area.

Note 6. Suspect Areas are locations showing substantial corrosion and/or are considered by the Surveyor to be prone to rapid wastage.

4.3.5 At each Special Survey, thickness measurements are to be taken in way of critical Suspect Areas, as considered necessary by the Surveyor. Critical areas Suspect Areas are to include locations throughout the ship that show substantial corrosion and/or are considered prone to rapid wastage or erosion.

■ **Section 5** **Special Survey of ships over 15 years old – Hull requirements**

5.3 **Determination of thickness Thickness measurements**

■ **Section 6** **Special Survey of tankers – Hull requirements**

6.3 **Testing**

6.3.1 All cargo tanks are to be tested by filling the tanks with water to the top of the hatch coaming. Cofferdams and cargo tanks of tankers of Type G, C and N, see Pt 4, Ch 4 General Requirements For Tankers Carrying Dangerous Liquids in Bulk, Pt 4, Ch 5 Tankers of Type G and Pt 4, Ch 6 Tankers of Types C and N, are to be pressure tested with water to the top of the hatch coaming at ~~uneven~~ odd-numbered Special Surveys (first, third, fifth and so forth). At even-numbered Special Surveys (second, fourth, sixth and so forth) the tanks are to be pressure tested in accordance with the requirements of Table 1.7.2 Testing requirements in Pt 3, Ch 1 Pt 3, Ch 1, 7.3 Acceptance testing on completion.

6.4 **Determination of thickness Thickness measurements**

6.4.1 The requirements of *Pt 1, Ch 3, 4.3 Thickness measurements* are to be complied with at **Special Surveys**. **Special Survey II** (~~Ships 10 years old~~).

■ **Section 7**

Special Survey of tankers with cargo tanks independent from the ship's structure – Hull requirements

7.2 Preparation and inspection

7.2.1 Special attention should be paid to the ship's structure underneath the cargo tanks and the supports, **chocking and securing arrangements, etc.** of these tanks.

7.3 Testing

7.3.1 All cargo tanks are to be tested by filling the tanks with water to the top of the hatch coaming or equivalent method. Cofferdams and cargo tanks of tankers of Type G, C and N, see *Pt 4, Ch 4 General Requirements For Tankers Carrying Dangerous Liquids in Bulk*, *Pt 4, Ch 5 Tankers of Type G* and *Pt 4, Ch 6 Tankers of Types C and N*, are to be pressure tested with water to the top of the hatch coaming at ~~uneven odd-numbered~~ Special Surveys (first, third, fifth and so forth). At even-numbered Special Surveys (second, fourth, sixth and so forth) the tanks are to be pressure tested in accordance with the requirements of *Table 1.7.2 Testing requirements in Pt 3, Ch 1 Pt 3, Ch 1, 7.3 Acceptance testing on completion*.

7.4 Determination of thickness Thickness measurements

7.4.1 The requirements of *Pt 1, Ch 3, 4.3 Thickness measurements* are to be complied with for the hull structure at each **Special Survey II** (~~ships 10 years old~~) and at each **Special Survey thereafter**. Cargo tanks independent from the ship's structure are to be gauged, by drilling ultrasonic thickness measurement or other approved means, to determine the amount of general diminution in thickness. The gauging is to be done in at least one place on each tank (in two places on each tank over 20 m in length) in each strake of bottom, forward and aft side and top plating. The remainder of the plating is to be gauged as deemed necessary by the Surveyor, taking into account the results of gauging already carried out.

■ **Section 8**

Ships for liquefied gases under pressure and/or partially refrigerated

8.1 General Annual Surveys

8.1.1 The requirements of *Pt 1, Ch 3, 2 Annual Survey – Hull requirements* are to be complied with as applicable.

8.1.2 For requirements of Special Survey for electrical equipment, see *Pt 1, Ch 3, 12 Electrical equipment*. The requirements of *Pt 1, Ch 3, 10.1 Annual Surveys* for machinery are to be complied with as applicable.

8.1.3 The Annual Survey requirements of *Pt 1, Ch 3, 12.2 Annual and Intermediate Surveys* for electrical equipment are to be complied with as applicable.

8.2 Intermediate Surveys – Basic General requirements

8.3 Intermediate Surveys – Refrigerating equipment

(Part only shown)

8.3.1 Where refrigerating equipment for cargo temperature and pressure control is fitted the following are to be examined so far as practicable:

(a) The machinery under working conditions.

8.4 Special Surveys – General requirements

8.4.1 For requirements of Special Survey for electrical equipment, see *Pt 1, Ch 3, 12 Electrical equipment*. The requirements of *Pt 1, Ch 3, 8.1 General* are to be complied with so far as applicable.

8.4.2 All cargo tanks are to be examined internally and externally so far as practicable, particular attention being paid to the plating in way of supports and of **chocking and securing arrangements** and pipe connections.

8.4.4 The Surveyor may require to gauge, by ~~ultrasonic thickness measurement~~ ~~drilling~~ or other approved means, the thickness of the material in any portion of the cargo tank structure where sign of wastage is evident, wastage is normally found or where there is doubt as to the condition of the structure in way of insulation. Any parts of the cargo tank structure which are found defective or materially reduced in scantlings are to be made good by materials of approved scantlings and quality.

8.7 Determination of thickness Thickness measurement of tank plating

8.7.1 In addition to the requirements of Pt 1, Ch 3, 8.4 *Special Surveys – General requirements* 8.4.4, thickness measurement ~~determination of thickness~~ of cargo tank plating is to be carried out at each Special Survey by ultrasonic thickness measurement ~~drilling~~ or other approved means, to determine the amount of any general diminution. The gauging is to be carried out in at least two places of the bottom, forward and aft tank plating, side and top plating. The remainder of the plating is to be gauged as deemed necessary by the Surveyor, taking into account the results of gauging already carried out.

■ Section 9 Dredgers, hopper dredgers, sand carriers, hopper barges and reclamation craft

9.1 General

9.1.1 The requirements of this Section are to be complied with, as applicable, in addition to the survey requirements of Pt 1, Ch 3, 2 *Annual Survey – Hull requirements*. Where surveys are required on dredging or hopper equipment such as gantries, bottom doors and their operating gear, positioning spuds and suction pipe attachments, these will be limited to the extent considered necessary by the Surveyor to ~~be satisfied~~ ~~satisfy himself~~ that their condition or malfunction will not adversely affect the ship's structure.

9.2 Special Surveys

9.2.1 On ships under 10 years old:

- (a) Hoppers are to be cleared and cleaned as necessary and examined.
- (b) Where applicable, hopper doors or valves are to be opened and closed, so far as is practicable, but keel blocks need not normally be moved specially to permit this to be done.
- (c) The integrity of hopper overflows and diluting water inlet and distribution structures are to be confirmed. Weir valves and sluices are to be tested to ensure proper operation, particular attention being paid to the lower weir, when weirs are fitted at more than one level.
- (d) Attention is to be given to shell plating in way of hopper overflows.
- (e) The attachment to the ship's structure of all main items of dredging equipment, including gantries, 'A' frames and spud ~~control gear~~ ~~control gear~~ supports, is to be carefully examined to ensure that no fracture or other damage is present.

9.2.2 On ships over 10 years old:

- (a) Attention is to be given by the Surveyor to the structure in way of dredging pumps.
- (b) Hopper doors and valves are to be checked for proper operation, and their hinges, ~~control gear~~ ~~control gear~~ and other fittings are to be examined for wear or distortion. All seals and wear-down strips are to be replaced if necessary, but a watertight seal is not normally required. Attention is to be paid to areas likely to be suffering from excessive erosion.
- (c) Those items of dredging gear and equipment whose efficiency is not part of classification but whose failure or malfunctioning is, nevertheless, likely to affect the ship's structure adversely, are to be examined to ensure that the structural integrity of the ship is maintained.

9.3 Determination of thickness Thickness measurement

9.3.1 The requirements of Pt 1, Ch 3, 4.3 *Thickness measurements* are to be complied with at each Special Survey, ~~II (Ships 10 years old)~~ and at each ~~Special Survey thereafter~~.

■ Section 10 Machinery surveys – General requirements

10.1 Annual Surveys

10.1.1 In ships which are to be subjected to Annual Surveys as set out in Pt 1, Ch 2, 3.5 *Existing ships – Periodical Surveys* 3.5.1 and are placed in dry dock or on a slipway, see Pt 1, Ch 3, 2.1 *Preparation* 2.1.2 Pt 1, Ch 2, 3.5 *Existing ships – Periodical Surveys* 3.5.7, the propeller(s), sternbush(es), water inlets and outlets and gratings are to be examined. The clearance in each sternbush or the efficiency of each stern gland is to be ascertained.

10.2 Intermediate Surveys

10.2.2 The machinery installation is to be generally examined and ~~tried tested~~ under full load working conditions. If the results of the trials are satisfactory, the Surveyor may waive opening up of the machinery.

10.3 Complete Survey of machinery

10.3.3 An examination is to be made of all reduction gears complete with all wheels, pinions, shafts, bearings and gear teeth, thrust bearings and integral clutch arrangements. Toothed parts and clutches may be checked through inspection doors. Opening up may be required by the Surveyor in view of the ~~visible~~ condition of the ~~certain~~ components.

10.3.4 The following auxiliaries and components are to be examined under working conditions:

- (a) Auxiliary engines, auxiliary air compressors with their intercoolers, filters and/or oil separators and safety devices, and all pumps and components used for essential services.
- (b) Steering machinery.
- (c) Windlass(es) and associated driving equipment, where fitted. Opening up may be required by the Surveyor depending upon the trial results or the ~~visible~~ condition of the ~~certain~~ components.

10.3.10 ~~In addition to the requirements of Pt 1, Ch 3, 10.3 Complete Survey of machinery 10.3.1, Detailed detailed requirements for engines, electrical installations and boilers are given in Pt 1, Ch 3, 11 Engines – Detailed requirements, Pt 1, Ch 3, 12 Electrical equipment and Pt 1, Ch 3, 13 Boilers, respectively. In certain instances, upon application by the Owner or where indicated by the maker's servicing recommendations, the Surveyor will give consideration to the circumstances where deviation from these detailed requirements is warranted, taking into account design, appropriate indicating equipment and operational records.~~

■ Section 11 Engines – Detailed requirements

11.1 Complete Surveys

11.1.3 Selected pipes in the starting air system are to be removed for internal examination and are to be ~~hammer tested~~ ~~hammer tested~~. If any appreciable amount of lubricating oil is found in the pipes, the starting air system is to be thoroughly cleaned internally by steaming out, or other suitable means. Some of the pipes selected are to be those adjacent to the starting air valves at the cylinders and to the discharges from the air compressors.

■ Section 13 Boilers

13.1 Frequency of surveys

13.1.2 Consideration may be given in exceptional circumstances to an extension of the internal examination of the boiler not exceeding three months beyond the due date. The extension may be granted after the following is satisfactorily carried out:

- (a) External examination of the boiler.
- (b) Examination and operational test of the boiler safety valve relieving gear (easing gear).
- (c) Operational tests of the boiler protective devices.
- (d) Review of the following records since the previous boiler survey:
 - Operation
 - Maintenance
 - Repair history
 - Feedwater chemistry.

Note: In this context 'exceptional circumstances' means unavailability of repair facilities, essential materials, equipment or spare parts.

13.2 Scope of surveys

13.2.3 The fuel oil burning system is to be examined under working conditions and a general examination made of fuel tank valves, pipes, ~~deck-control gear~~ ~~control gear~~ and oil discharge pipes between pumps and burners.

■ **Section 14** **Steam pipes**

14.2 Scope of surveys

14.2.2 Where these steam pipes of the category described in *Pt 1, Ch 3, 14.2 Scope of surveys 14.2.1* have welded joints between lengths of pipe and/or between pipes and valves, the lagging in way of the welds is to be removed, the welds examined, and, if considered necessary by the Surveyor, crack-detected. Pipe ranges having welded joints are to be hydraulically tested to 1,5 times the working pressure. Where lengths having ordinary bolted joints are fitted in such pipe ranges and can be readily disconnected, they are to be removed for internal examination and hydraulically tested to 1,5 times the working pressure.

14.2.3 At the surveys **Steam Pipe** Surveys specified in *Pt 1, Ch 3, 14.1 Frequency of surveys 14.1.1*, any copper or copper alloy pipes, such as those having expansion or other bends, which may be subjected to bending and/or vibration, are to be annealed before being tested.

■ **Section 15** **Screwshafts, tube shafts and propellers**

15.1 Frequency of surveys

15.1.2 When directional propellers for main propulsion purposes are fitted, they are to be opened up for examination of the working parts and **control gear** at intervals of five years.

15.2 Scope of surveys

15.2.1 All screwshafts and tube shafts are to be withdrawn at the intervals prescribed in *Pt 1, Ch 3, 15.1 Frequency of surveys 15.1.1* for examination by LR's Surveyors.

15.2.2 Controllable pitch propellers are to be surveyed at the same time as the screwshafts. The working parts and **control gear** are to be opened up for examination.

■ **Section 16** **Inert gas systems**

16.2 Scope of surveys

16.2.1 The inert gas system, including alarms and safety devices, is to be examined and tested to demonstrate that it is in good working condition, to the satisfaction of the Surveyors.

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